

EXHIBIT A

THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS

BULLETIN

Volume 44, Number 1 January 1996

Satellite links Mayo, Jordan hospitals

Permanent set-up for construction and education

Another milestone in the telemedicine history of Mayo Clinic, Rochester, Minn., was reached Nov. 16, 1995 when Mayo opened a permanent telemedicine link with the King Hussein Medical Centre and the Amman Surgical Hospital in Amman, Jordan.

Satellite communications technology has bridged the 6,900 miles to provide physicians and patients in Jordan with permanent telemedicine and tele-education access to Mayo.

That's a long way from the telephone transmission of electrocardiographic signals from Saint Marys and Rochester Methodist Hospitals to Mayo in 1967. By the 1970s, Mayo doctors were communicating with Sidney, Australia by telephone. In 1978, Mayo participated in a live two-way telecast to Sydney and in 1984 Mayo formed a Telecommunications Task Force to exploit new communications technologies.

Active in 1980s

Since the 1980s, Mayo has had telecommunications links with the Mayo Clinic in Scottsdale, Ariz., and in Jacksonville, Fla., for everything from medical consultations to administrative functions.

Mayo has been involved in temporary international satellite connections with hospitals in Italy and Greece and participated in tele-education conferences with universities and clinics throughout the United States, Canada, Mexico, South America, Europe, and Australia. The link with Jordan is the first permanent international link.

Three years ago, Jordanian physicians approached Mayo officials with the concern that although they had well-trained doctors in their country, they had no continuing medical education programs to stay current with advances in medicine, said David Larson, medical director of Mayo International Consulting Service.

Permanent link

The discussions evolved into a decision to establish a satellite video link with the Amman hospital. King Hussein, who was a patient at Mayo in 1992, asked that the linkage include the King Hussein Medical Centre, a tertiary care complex that includes the 560-bed King Hussein Hospital, the 130-bed Farah Royal Jordanian Rehabilitation Centre, and a 100-bed Queen Alia Heart Institute.

Mayo designed the telemedicine rooms in the Jordanian hospitals and set-up the technical infrastructure. The rooms are equipped with television monitors, a video camera mounted above the patient examination table, and special equipment that allows Mayo physicians to conduct long-distance patient evaluation. Special devices allow Mayo physicians in Rochester, Phoenix, and Jacksonville to view magnified patches of skin

of a patient with a dermatological problem and to peer into a patient's eardrum or eye.

Starting this January, Mayo will conduct bimonthly medical education programs beamed into an auditorium at King Hussein Medical Centre.

The 90-minute inauguration of the link with Jordan came on the 60th birthday of King Hussein. During the transmission, Jordanian physicians showed images of their patient's retinal blood vessels, a chest X-ray, and an electronic scan of a brain cyst.

Mayo may expand its international telemedicine program. Last January, Mayo signed a cooperative agreement to develop a telemedicine link with the Diagnostic and Therapeutic Center in Athens, Greece.

Michael Wood, MD, a professor of orthopaedic surgery and chairman of the Mayo Foundation Communications Committee, said Mayo also uses two satellites and a land transmission line to reach out to people and physicians in rural and remote areas of the United States. A telemedicine link via a land transmission line has been established with a nonphysician provider at the Mayo Family Practice Clinic in Kenyon, Minn. Telemedicine links also have been established between Rochester and hospitals in Mankato, Minn. and Grand Forks, N.D. Teleradiology service links have reached Austin, Minn.; Decorah, Iowa; and LaCrosse, Wis.

Use ACTS satellite

Mayo has been one of many public and private organizations experimenting with NASA's Advanced Communications Technology Satellite (ACTS) satellite. Mayo reached out to the Indian Health Service in Pine Ridge, S.D., by sending a signal to the NASA satellite, which was bounced back to the Mayo campus in Scottsdale, and sent over land lines to Rochester.

For several years, Mayo has leased space on another satellite, but it is expected to move out of orbit in about 1 1/2 years. That will present Mayo with a critical decision about the use of satellite transmission.

Mayo initially used satellite transmission because there were few land transmission lines and the quality of images sent by terrestrial transmission was not as good as satellite images, Dr. Wood said. But new technology has improved the resolution of images over land transmission lines. At the same time the cost to lease the use of a satellite has escalated. The decision boils down to questions of what is most cost-effective and what is the need for the highest data resolution.

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Last modified 03/September/1997 by IS